21. A method for concurrently generating a secondary amplification product and an amplification product in a nucleic acid amplification reaction, the method comprising:

a) hybridizing a signal primer to a target sequence and hybridizing a first amplification primer to the target sequence upstream of the signal primer;

b) extending the hybridized signal primer on the target sequence to produce a signal primer extension product and extending the hybridized first amplification primer on the target sequence such that extension of the first amplification primer displaces the signal primer extension product from the target sequence;

c) hybridizing a second amplification primer to the signal primer extension product and extending the hybridized second amplification primer on the signal primer extension product to produce a second amplification primer extension product comprising a newly synthesized strand;

d) displacing the newly synthesized strand from the signal primer extension product; and

e) hybridizing the signal primer to the displaced newly synthesized strand and extending the signal primer such that a double stranded secondary amplification product is generated.

22. The method of claim 21 further comprising detecting the secondary amplification product by means of a chemical modification or special nucleotide sequence incorporated into the signal primer.

23. The method of claim 22 wherein the secondary amplification product is detected by means of an affinity ligand or reporter group incorporated into the signal primer.

24. The method of claim 22 wherein the secondary amplification product is detected by means of a nucleotide sequence incorporated into the signal primer, the nucleotide sequence comprising a recognition site for a double-stranded DNA binding protein.

25. The method of claim 22 wherein the secondary amplification product is detected by means of a nucleotide sequence incorporated into the signal primer, the nucleotide sequence comprising a restriction endonuclease recognition site.

26. The method of claim 25 wherein the secondary amplification product is detected by cleaving the restriction endonuclease recognition site with a restriction endonuclease to generate a cleavage product.

27. The method of claim 26 wherein the secondary amplification product is detected by separating the cleavage product on the basis of size and detecting the cleavage product.

28. The method of claim 27 wherein the cleavage product is separated by filtration.

29. A method for concurrently generating a secondary amplification product and an amplification product in a nucleic acid amplification reaction, the method comprising:

a) hybridizing a first signal primer to a first strand of a double-stranded target sequence and hybridizing a first amplification primer to the first strand of the target sequence upstream of the first signal primer;

b) extending the hybridized first signal primer on the first strand to produce a first extension product and extending the hybridized first amplification primer on the first strand such that extension of the first amplification primer displaces the first extension product from the target sequence;

c) hybridizing a second signal primer to the first extension product and hybridizing a second amplification primer to the first extension product upstream of the second signal primer;

d) extending the hybridized second signal primer on the first extension product to produce a second extension product and extending the hybridized second amplification primer on the first

extension product such that extension of the second amplification primer displaces the second extension product from the first extension product; and

e) hybridizing the first signal primer to the displaced second extension product and extending the hybridized first signal primer on the second extension product such that a double stranded secondary amplification product is generated.

30. The method of claim 29 further comprising detecting the secondary amplification product by means of a reporter group incorporated into the first signal primer and a modification to facilitate capture of the secondary amplification product incorporated into the second signal primer.

31. The method of claim 29 further comprising:

a) hybridizing the second signal primer to a second strand of the double stranded target sequence and hybridizing the second amplification primer to the second strand of the target sequence upstream of the second signal primer;

b) extending the hybridized second signal primer on the second strand to produce a third extension product and extending the hybridized second amplification primer on the second strand such that extension of the second amplification primer displaces the third extension product from the second strand of the target sequence;

c) hybridizing the first signal primer to the displaced third extension product and hybridizing the first amplification primer to the displaced third extension product upstream of the first signal primer;

d) extending the hybridized first signal primer on the third extension product to produce a fourth extension product and extending the hybridized first amplification primer on the third extension product such that extension of the first amplification primer displaces the fourth extension product from the third extension product; and

e) hybridizing the second signal primer to the displaced fourth extension product and extending the second signal primer on the fourth extension product such that a double stranded secondary amplification product is generated.

32. The method of claim 31 further comprising detecting the secondary amplification product by means of a chemical modification or special nucleotide sequence incorporated into the signal primer.

33. The method of claim 32 wherein the secondary amplification product is detected by means of an affinity ligand or reporter group incorporated into the signal primer.

34. The method of claim 32 wherein the secondary amplification product is detected by means of a nucleotide sequence incorporated into the signal primer, the nucleotide sequence comprising a recognition site for a double-stranded DNA binding protein.

35. The method of claim 32 wherein the secondary amplification product is detected by means of a nucleotide sequence incorporated into the signal primer, the nucleotide sequence comprising a restriction endonuclease recognition site.

36. The method of claim 35 wherein the secondary amplification product is detected by cleaving the restriction endonuclease recognition site with a restriction endonuclease to generate a cleavage product.

37. The method of claim 36 wherein the secondary amplification product is detected by separating the cleavage product on the basis of size and detecting the cleavage product.

38. The method of claim 37 wherein the cleavage product is separated by filtration.

39. The method of claim 22 wherein the secondary amplification products are detected in real-time.

40. The method of claim 22 wherein the secondary amplification products are detected post-amplification.

41. The method of claim 29 wherein the secondary amplification products are detected in real-time.

42. The method of claim 29 wherein the secondary amplification products are detected post-amplification.

43. A signal primer comprising:

a) a target binding sequence which hybridizes to a target sequence at a position downstream of the position where a nucleic acid amplification primer hybridizes to the target sequence;

b) a 3' end which is extendable to generate a signal primer extension product, said signal primer extension product displaceable from the target sequence by extension of the nucleic acid amplification primer; and

c) a means for detecting the signal primer extension product.

44. The signal primer of claim 43 ~~wherein~~ said means for detecting the signal primer extension product is selected from the group consisting of size which differs from that of a nucleic acid primer amplification product, chemical modification, special nucleotide sequence, and a structural feature.

45. The signal primer of claim 44 wherein said chemical modification is selected from the group consisting of an affinity ligand and a reporter group.

46. The signal primer of claim 45 wherein said affinity label is selected from the group consisting of avidin, streptavidin, biotin, haptens, antigens and antibodies.

47. The signal primer of claim 45 wherein said reporter group is selected from the group consisting of radioisotopes, fluorescent dyes, enzymes which react to produce detectable reaction products and visible dyes.

48. The signal primer of claim 44 wherein said special nucleotide sequence is selected from the group consisting of sequences which will form a triple helix by hybridization an oligonucleotide probe to a double stranded amplification product comprising a signal primer extension product hybridized to an amplification primer extension product and recognition sequences for double-stranded nucleic acid binding proteins.

49. The signal primer of claim 44 wherein said structural feature comprises a nucleotide sequence which results in a double stranded restriction endonuclease recognition site in a secondary amplification product.

50. A product of a nucleic acid amplification process comprising the signal primer of claim 43 hybridized to an extension product of a nucleic acid amplification primer.